Transport-related SDGs and data requirements

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Beirut, 16-18 September 2019
Overview

• Transport-related SDGs and their data needs:
  • Road Safety  SDG 3.6.1
  • Resilient infrastructure  SDG 9.1.1, 9.1.2
  • Sustainable cities and  SDG 11.2.1
    convenient public transport
  • Data needs
3.6.1 By 2020, halve the number of global deaths and injuries from road traffic accidents

- Tier 1
- Custodian agency – WHO, other agencies involved: UNECE
Road deaths in ECE

- 24% regional drop between 2005 and 2015
- ~8% reduction per year 2007-2010, but broadly flat since
- Positive trend masks huge differences between countries.
Road Safety Definitions from the Glossary

**PERSON KILLED**

Any person killed immediately or dying within 30 days as a result of an injury accident excluding suicides.

A killed person is excluded if the competent authority declares the cause of death to be suicide, i.e. a deliberate act to injure oneself resulting in death. For countries that do not apply the threshold of 30 days, conversion coefficients are estimated so that comparisons on the basis of the 30 day-definition can be made.

**PERSON INJURED**

Any person who as result of an accident was not killed immediately or not dying within 30 days, but sustained injury, normally needing medical treatment, excluding attempted suicides.

Persons with lesser wounds, such as minor cuts and bruises are not normally recorded as injured.

An injured person is excluded if the competent authority declares the cause of the injury to be attempted suicide by the person, i.e. a deliberate act to injure oneself resulting in injury, but not in death.

**PERSON SERIOUSLY INJURED**

Any person injured who was hospitalised for a period of more than 24 hours.

**MAXIMUM ABBREVIATED INJURY SCALE (MAIS)**

The Maximum Abbreviated Injury Scale is a medical classification on the severity of injuries. MAIS 1-2 is regarded as slight injuries and 3-6 as serious injuries. Other classifications can be used if they can be transcoded to MAIS.
• Are road safety data from Countries A and B comparable?
• Higher accident severity in Country B? Differing definitions? Statistical coverage?
Road safety: collecting the data

Police data: collected at the scene. Minor accidents (and sometimes fatal ones) may be underreported or lost. Using police officers to determine injury severity is imperfect. Typically use 30 day definition but this depends on country (and relies on accurate police follow-up).

Hospital data:
Can still under-report accidents in some countries. May over-report due to accident-victims dying from e.g. pneumonia a year after an accident.
Road safety: reconciling data sources

Fatalities: use the hospital data to reconcile and adjust police fatality data if necessary.

Injuries and serious injuries: publish data from both sources. Hospital data following clear definitions such as MAIS 3+ may be more accurate and internationally comparable.
Turkey road fatalities

Data for 2015 onwards use 30 day definition. Up to 2014, only deaths at the crash scene were included.
Effect of methodology change: UK example

Note: cyclists made up a greater proportion of the MAIS3+ data than the police data (well documented reason: under-reporting of cycling injuries in police data)

Overall trends can mask different patterns in different road users. (Data for USA).
Three quarters of road fatalities are men, but pedestrian fatalities are closer to 50/50. Understanding gender (and age, victim etc.) differences in data means policy tools can be better targeted.
SDG 9: Resilient infrastructure

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

• 9.1.1 Proportion of the rural population who live within 2 km of an all-season road
  - Tier 2
  - custodian agency – World Bank, other agencies involved: UNEP, UNECE
  - suggested methodology exists, currently being tested

• 9.1.2 Passenger and freight volumes, by mode of transport
  - Tier 1
  - custodian agencies – ICAO, ITF-OECD, other agencies involved: UNEP, UNECE
How to calculate passenger-km and tonne-km? Guidelines on compilation?

Include Inland waterways? Pipeline? Road breakdown? Active modes?

Can inland modes be meaningfully compared with maritime and aviation?

Residency or territoriality principle (make adjustments?)

Is the goal to increase passenger and freight volumes? Or is it a modal split analysis?

Goal is for resilient infrastructure. What about “Sustainable transport”?

Methodological guidance on this is a priority for UNECE.
## Reporting 9.1.2: Guidance needed

<table>
<thead>
<tr>
<th>Index</th>
<th>Value</th>
<th>Rank</th>
<th>In 2018</th>
<th>In 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4% of gross domestic product</td>
<td>2018</td>
<td>3rd</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Gross fixed capital formation in infrastructure</td>
<td>2018</td>
<td>3rd</td>
<td>4.15 km of roads per km² land area</td>
<td></td>
</tr>
<tr>
<td>Density of public road network</td>
<td>2018</td>
<td>3rd</td>
<td>0.10 km of railway track per km² land area</td>
<td></td>
</tr>
<tr>
<td>Density of railway network</td>
<td>2018</td>
<td>3rd</td>
<td>85.6% volume relative to GDP, index (2005=100) in 2016</td>
<td></td>
</tr>
<tr>
<td>[SDG 9.1.2] Passenger transport</td>
<td></td>
<td>23rd</td>
<td>85.6%</td>
<td></td>
</tr>
<tr>
<td>99.9% of total passenger-kilometres</td>
<td>2016</td>
<td>5th</td>
<td>99.9%</td>
<td></td>
</tr>
<tr>
<td>Travelling by car</td>
<td>2016</td>
<td>5th</td>
<td>86.0%</td>
<td></td>
</tr>
<tr>
<td>11.0% of total passenger-kilometres</td>
<td>2016</td>
<td>2nd</td>
<td>11.0%</td>
<td></td>
</tr>
<tr>
<td>Travelling by train</td>
<td>2016</td>
<td>2nd</td>
<td>11.0%</td>
<td></td>
</tr>
<tr>
<td>846.4 km per capita</td>
<td>2017</td>
<td></td>
<td>846.4</td>
<td></td>
</tr>
<tr>
<td>Travelling by bicycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2% of the total number of cars</td>
<td>2018</td>
<td></td>
<td>3.2%</td>
<td></td>
</tr>
<tr>
<td>Electric cars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.93 vehicle-hours per capita</td>
<td></td>
<td></td>
<td>3.93</td>
<td></td>
</tr>
<tr>
<td>Time lost due to traffic congestion and delays</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is this bad?

### E.U. Approach to SDG 9.1

<table>
<thead>
<tr>
<th>Sustainable transport</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of buses and trains in total passenger transport</td>
<td></td>
</tr>
<tr>
<td>Share of rail and inland waterways activity in total freight transport</td>
<td></td>
</tr>
<tr>
<td>Average CO₂ emissions per km from new passenger cars (*)</td>
<td></td>
</tr>
</tbody>
</table>

SDG 9.1.2: national and local data gaps

Light Goods Vehicles insignificant on a tonne/tonne-km basis.

What about vehicle-km, climate heating gases, local pollutants, urban congestion, road safety, dangerous parking, noise etc.?

Both graphs from CBS Netherlands.
SDG 11: Sustainable cities

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

- 11.2.1 Proportion of the population that has convenient access to public transport, by sex, age and persons with disabilities
  - Tier 2
  - custodian agency – UN-Habitat, other agencies involved: UNEP, UNECE
  - more information: City Prosperity Initiative, UN-Habitat has developed the methodology to aggregate the information at national, regional and global levels

Public transport access not measured by traditional transport statistics. But to understand this, public transport use is necessary.
### Modal Split in Germany 2017

Main transport mode by residence of persons - percentage of trips

<table>
<thead>
<tr>
<th>Urban Region</th>
<th>Walking</th>
<th>Cycling</th>
<th>Car as Driver</th>
<th>Car as Passenger</th>
<th>Public Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>22</td>
<td>11</td>
<td>43</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td><strong>Territorial Typology RegioStaR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolis</td>
<td>27</td>
<td>15</td>
<td>28</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Regiopolis and big city</td>
<td>24</td>
<td>14</td>
<td>37</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Medium-sized city, urbanized</td>
<td>21</td>
<td>10</td>
<td>46</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Small-sized city, rural area</td>
<td>18</td>
<td>8</td>
<td>51</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Central city</td>
<td>24</td>
<td>13</td>
<td>41</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Medium-sized city, urbanized</td>
<td>20</td>
<td>9</td>
<td>49</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Small-sized city, rural area</td>
<td>17</td>
<td>7</td>
<td>55</td>
<td>15</td>
<td>5</td>
</tr>
</tbody>
</table>

[www.bmvi.de/mid](http://www.bmvi.de/mid) or [www.mobilitaet-in-deutschland.de](http://www.mobilitaet-in-deutschland.de)
SDG 9.1.2 AND 11.2.1: INTERLINKAGES

- UNECE already collects Urban bus data.
- Work starting on collecting metro and tram data (passenger numbers and passenger-km). Plan is to maintain the city-by-city breakdown.
Summary

• For SDG 3, following glossary definitions allows international comparability. Detailed breakdowns allow specific policy measures.

• SDG 9.1.1 can be calculated from satellites and census information.

• SDG 9.1.2 needs passenger-km and tonne-km collected from detailed surveys or estimated. Does your country want to see continually increasing traffic volumes, or does it care more about the split between different modes?

• SDG 11.2.1 is a measure of urban public transport access. Public transport use is needed to understand urban transport issues.

• Monitoring the transport SDG indicators requires good quality, annual transport statistics.

• Read our informal transport SDG papers at unece.org/trans/areas-of-work/transport-statistics/statistics-and-data-online/sdg-papers.html.
Suggestions? Comments?
We are here to help!

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